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Avaya Ethernet Routing Switch 5900 Series

The Avaya Ethernet Routing Switch 5900 Series is a premium Stackable Chassis system providing high-performance, convergence-ready, resilient and more secure Ethernet switching connectivity. Supporting Avaya Fabric Connect, it also delivers virtual fabric services to the network edge / wiring closet environment. Available in 4 model variants supporting 10/100/1000 switching and routing, 40 uplink capacity Gbps (4 x SFP+) and Power-over-Ethernet+, the Ethernet Routing Switch 5900 is ideally suited for high-end wiring closet and network edge deployments.

Highlights of the Ethernet Routing Switch 5900

- **Always-on –** Best in class end-to-end resiliency solution, hot-swappable unit replacement within a Stack Chassis and integrated power redundancy.
- **Convergence-ready –** Support for PoE and PoE+, optimized for high-definition video surveillance, true plug and play capabilities for IP Phone deployments, advanced QoS capabilities.
- **Powerful –** Wire-speed performance, true pay-as-you-grow Stackable Chassis capabilities, delivering up to 400 ports, 672 Gbps of virtual backplane throughput, and up to 40 Gbps uplink capacity.
- **Fabric-enabled –** Support for Avaya Fabric Connect that extends virtual fabric services from the data center all the way to the wiring closet.
- **Comprehensive Layer 3 Services –** Advanced routing features enable traffic segregation ideal for network distribution and core applications.
- **Mitigates Risk –** Standards-based IEEE 802.1x with integration with Avaya's Identity Engines portfolio for centralized, policy-based authenticated network access. Also MACSec-ready (IEEE 802.1AE) for encryption-based protection services.[1]
- **Flexible –** Mix-and-match best-in-class stacking capabilities with support for PoE/PoE+ and optional 1GbE / 10GbE SFP+ uplinks.

The Ethernet Routing Switch 5900 Series provide resilient Stackable Chassis capabilities, high-performance Layer 2 switching, Layer 3 routing, advanced convergence features and a full suite of security, QoS and management capabilities.

The ERS 5900 hardware is based on next-generation ASIC technology that combines wire-speed performance and non-blocking throughput with sophisticated QoS capabilities to support even the most demanding suite of applications. It can be positioned for a variety of customer scenarios, including:

- High-end wiring closet – with advanced convergence features, including PoE/PoE+, QoS, comprehensive security risk mitigation and up to 40 Gbps uplink capacity, the ERS 5900 is a flexible high-performance switching option for converged edge deployments.
- Network distribution switch for campus – its Layer 3 routing services and high-performance make the ERS 5900 a powerful aggregation or distribution solution for both mid-market and large enterprises. It can connect either to core switches or directly to data center servers while reducing latency and providing high end-to-end performance.

Intelligent Stackable Chassis solution delivering performance, scalability, resilience and flexibility

Avaya introduced its first Stackable Chassis product in 1998 and we've been perfecting the technology ever since. We offer genuine chassis-like features including true pay-as-you-grow scaling, in-stack switch replacement and restoration. From a management perspective, our Stackable Chassis looks like a single network entity – utilizing only a single IP address to dramatically simplify software upgrades.

ERS 5900
Series Models

Avaya Ethernet Routing Switch 5900 Series	
Model	**Link and Uplink Ports**
ERS 5928GTS	24 x 10/100/1000BASE-T ports, plus 4 x SFP+ uplink ports
ERS 5928GTS-PWR+	24 x 10/100/1000BASE-T ports supporting 802.3at PoE+, plus 4 x SFP+ uplink ports
ERS 5952GTS	48 x 10/100/1000BASE-T ports, plus 4 x SFP+ uplink ports
ERS 5952GTS-PWR+	48 x 10/100/1000BASE-T ports supporting 802.3at PoE+, plus 4 x SFP+ uplink ports

High performance architecture with true pay-as-you grow scaling

Our Stackable Chassis products combine non-blocking internal switching fabrics with high-speed virtual backplane architecture to deliver a high performance solution that scales proportionally as new switches are added. The ERS 5900 Series can scale up to 672 Gbps of virtual backplane throughput by simply cabling together up to 8 units. Adding a new unit to the Stack Chassis is as easy as cabling in a new member, then extending the appropriate configuration. The necessary software images and the configuration file are automatically downloaded to the new unit and then brought on-line without any user intervention.

All ERS 5900 models come with two in-built Stackable Chassis interfaces for simple, cost-effective and efficient connectivity. Unlike comparative offerings which daisy chain low-speed interfaces, this design frees uplink ports for dedicated connectivity to the backbone. In addition to the stacking cables, a return cable is also used to protect against any port, unit or cable failures.

Figure 1. ERS 5900 stack back view with stacking cables, fans and power supplies

In-stack switch replacement and restoration

Virtual hot swap capabilities enable any failed switch unit of the Stackable Chassis to be quickly and easily replaced with a like-for-like switch without any impact to the existing traffic or any units. If a failure occurs, neighboring switches automatically wrap their fabric connections so that other switches within the Stackable Chassis are not impacted. The failed unit is simply disconnected from the virtual backplane and, without pre-staging of software or configuration, a like-for-like unit is inserted, cabled, and powered-up. The Automatic Unit Replacement (AUR) process self-manages software and configuration downloads to the new switch then brings it online, without the need for an engineer to configure or manage the process.

Further complementing the Stackable Chassis architecture, the Avaya ERS 5900 Series supports standards-based 802.3ad Link Aggregation as well as its own Multi-Link Trunking technology that allows grouping of links to form high-speed trunks/aggregations. Groups of links between the ERS 5900 and another device can be aggregated (or trunked) to enhance bandwidth and resiliency through active redundant links. Additionally, trunked links can span different units in the same Stackable Chassis, enabling more fail-safe connectivity to mission critical servers and the network core.

Stack health-check monitoring, a real-time, at-a-glance view of operational status and health further enhances operational and management simplicity.

Redundant power support

The ERS 5900 models support field-replaceable AC power supplies for improved redundancy and uptime. This power supply design offers N+1 power redundancy and/or supplementary PoE/PoE+ power budget, saving valuable rack space and enabling reduced system servicing and sparing costs. Non-power models utilize two 450 Watt Power Supply Units for redundancy, and PoE+ models utilize two 1400 Watt Power Supply units for redundancy.

Front-to-back and back-to-front cooling options

The ERS 5900 is designed to support then specific environmental needs of the wiring closet or data center with both front-to-back and back-to-front cooling options in its fan trays and power supplies. This gives users the flexibility to conform to a variety of hot-aisle/cold-aisle deployment requirements.

Centralized management

From a management perspective, our Stackable Chassis appears as a single networking entity – utilizing only a single IP Address. This can significantly reduce the number of switches to be managed within the network as a stack of up to 8 switches can be managed just as easily as a single switch.

Convergence-ready for UnifiedCommunications, High-Definition Video and more

For businesses looking to consolidate all forms of communication – voice, video and data – on a single infrastructure, the Avaya ERS 5900 Series delivers functionality that simplifies convergence of these technologies.

Support for IEEE 802.3at PoE+ to power your device

Through support for IEEE 802.3at PoE+ which delivers up to 32 Watts of power per port to end devices, ERS 5900s are able to power IP phones, wireless LAN access points, networked high-definition CCTV cameras and other devices. This eliminates the need for separate power supplies for each unit, enabling reduced cabling and management costs for adds, moves, or changes.

The 24-port and 48-port PoE+ enabled products (ERS 5928GTS-PWR+ and ERS 5952GTS-PWR+) support a maximum power budget of 800 Watts on a single power supply – enabling full 32 Watts of power on up to 24 PoE+ enabled access ports. With a secondary/redundant supply, full PoE+ power can be delivered to all 48 access ports.

Plug and play for IP phones

One of the main benefits offered by the ERS 5900 Series is plug and play support for IP phones enabled through a combination of IEEE 802.1ab Link Layer Discovery Protocol (LLDP) and Avaya's Auto Discovery and Auto Configuration (ADAC) capability.

With these features enabled, the ERS 5900 can automatically provision end devices such as IP Phones for simplified deployments and moves. The ERS 5900 dynamically applies the correct VLAN and QoS to both the IP phone and the attached edge port. When the phone is moved to another location, the configuration is automatically updated. In addition, QoS is automatically provisioned on the ERS 5900 uplink so that voice is given top priority from the wiring closet to the network core. These features save network operators time and can dramatically reduce the likelihood of a provisioning error during a large IP phone deployment.

Comprehensive QoS capabilities

The ERS 5900 series delivers the quality of service control needed for networks with a wide range of different application types. The ERS 5900 classifies, prioritizes and marks LAN IP traffic using up to four hardware queues on every port – including the rear SFP ports.

Classification can be based on MAC address, IP ToS/DSCP marking, IP source/destination address or subnets, TCP/UDP source/destination port/port range, IEEE 802.1p user priority bits, ingress source port, IP Protocol ID (e.g., TCP, UDP, IGMP), EtherType (e.g., IP, IPX) or the IEEE 802.1Q VLAN ID. Comprehensive traffic policing and traffic shaping are also supported.

Avaya Fabric Connect to the Wiring Closet

All ERS 5900 models support Avaya Fabric Connect enabling fabric services to be extended from the Data Center all the way to the campus edge wiring closet. Based on an enhanced implementation of Shortest Path Bridging, an open, standards-based and extensible fabric technology, Avaya Fabric Connect delivers an array of network services while providing a consistent enterprise-wide virtualization architecture that is simpler, more adaptive and reliable. With support on the ERS 5900, fabric services are delivered on a campus-grade stackable access switch and can be extended much closer to where applications and users actually connect to the network. The result is simplified provisioning of applications or services at a point much closer to their entry into the network – eliminating complex hop-by-hop configuration and improving overall network resiliency.

Securing access at the edge

The Ethernet Routing Switch 5900 offers a higher level of security risk mitigation through authenticated network access that leverages IEEE 802.1x (Extensible Authentication Protocol (EAP)) with extensions or using a device's MAC Address. Integration into Avaya's Identity Engines portfolio for centralized, policy-based access control is included along with more secure management enabled through features such as Secure Shell (SSH), Secure Sockets Layer (SSL), Simple Network Management Protocol (SNMPv3), IP Manager List, Remote Authentication Dial-In User Service (RADIUS), and TACACS+ authentication. The ERS 5900 Series also offers numerous features that help prevent direct Denial of Service Attacks. Last but not least, ERS 5900 hardware is future-ready for MACSec (IEEE 802.1AE), which provides even higher levels of confidentiality and integrity for data traversing the network.

Energy Efficiency

New regulations and rising awareness of the ever-increasing cost of electrical power keep energy efficiency top of mind. An innovator in this area, Avaya has built energy efficiency into many of its hardware products. In fact, independent testing indicates that Avaya LAN Switches, Call Servers, Gateways, Unified Messaging Servers and Gigabit IP Phones are typically more energy efficient than competitive equipment. The ERS 5900 employs highly efficient power supplies and also supports dynamic power management where each port can be configured to limit the power delivered to a device and for power priority level—low, high, and critical.

Furthermore, the ERS 5900 supports Avaya Energy Saver which can further conserve energy by turning down port speeds during designated off-peak hours.

Lifetime Warranty

Avaya includes industry-leading warranty services for our portfolio of stackable switches, including the Avaya ERS 5900 Series products. The warranty includes complimentary next-business-day shipment of failed units for the life of the product, and ongoing technical support. ERS 5900 lifetime warranty also provides complimentary access to new software releases.

Summary

Avaya is positioned to provide an end-to-end solution for converged networks. The Ethernet Routing Switch 5900 series, along with other Avaya products, can increase profitability and productivity, streamline business operations, lower costs and help your business gain a competitive edge.

Product Specifications

ERS 5928GTS

Switch Details	24 x 10/100/1000 Gigabit Ethernet ports Plus 4 x 1/10 Gigabit SFP+ ports Plus 2 x rear HiStack ports delivering up to 672 of Stackable Chassis throughput 1x out-of-band Ethernet port for management System CPU speed: 800 Mhz System Memory: 256 MB Flash, 1024 GB RAM Switch capacity and forwarding rate: 212 Gbps / 157 Mpps Ships with 1 set of 44 mm / 19' rack mount brackets
Dimensions:	4.4 cm – 1RU (H), 44.0 cm (W), 50.8 cm (D)
Weight:	6.92 kg
Power and Thermal	Supplied with 1 x 450 watt Field Replaceable AC power supply Supports second Field Replaceable AC power supply for redundancy Power consumption: 90 watts Thermal rating: 307 BTU/hour

Product Specifications (cont.)

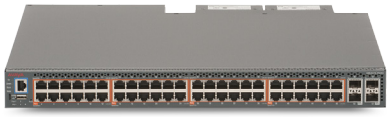
ERS 5928GTS-PWR+

Switch Details	24 x 10/100/1000 Gigabit Ethernet ports supporting IEEE 802.3af PoE or IEEE 802.3at PoE+ 4 x 1/10 Gigabit SFP+ ports 2 x rear HiStack ports delivering up to 672 of Stackable Chassis throughput 1x out-of-band Ethernet port for management System CPU speed: 800 Mhz System Memory: 256 MB Flash, 1024 GB RAM Switch capacity and forwarding rate: 212 Gbps / 157 Mpps Ships with 1 set of 44 mm / 19' rack mount brackets
Dimensions:	4.4 cm – 1RU (H), 44.0 cm (W), 50.8 cm (D)
Weight:	7.52 kg
Power and Thermal	Supplied with 1 x 1000 watt @120VAC or 1400 watt @220VAC watt Field Replaceable AC power supply Supports second Field Replaceable AC power supply for redundancy Power consumption: 230 watts @120VAC Thermal rating: 785 BTU/hour
PoE power output:	720 watts with single power supply

ERS 5952GTS

Switch Details	48 x 10/100/1000 Gigabit Ethernet ports Plus 4 x 1/10 Gigabit SFP+ ports Plus 2 x rear HiStack ports delivering up to 672 of Stackable Chassis throughput 1x out-of-band Ethernet port for management System CPU speed: 800 Mhz System Memory: 256 MB Flash, 1024 GB RAM Switch capacity and forwarding rate: 260 Gbps / 193 Mpps Ships with 1 set of 44 mm / 19' rack mount brackets
Dimensions:	4.4 cm – 1RU (H), 44.0 cm (W), 50.8 cm (D)
Weight:	7.11 kg
Power and Thermal	Supplied with 1 x 450 watt Field Replaceable AC power supply Supports second Field Replaceable AC power supply for redundancy Power consumption: 95 watts Thermal rating: 324 BTU/hour

ERS 5952GTS-PWR+



Switch Details	48 x 10/100/1000 Gigabit Ethernet ports Plus 4 x 1/10 Gigabit SFP+ ports Plus 2 x rear HiStack ports delivering up to 672 of Stackable Chassis throughput 1x out-of-band Ethernet port for management System CPU speed: 800 Mhz System Memory: 256 MB Flash, 1024 GB RAM Switch capacity and forwarding rate: 260 Gbps / 193 Mpps Ships with 1 set of 44 mm / 19' rack mount brackets
Dimensions:	4.4 cm – 1RU (H), 44.0 cm (W), 50.8 cm (D)
Weight:	7.11 kg
Power and Thermal	Supplied with 1000 watt @120VAC or 1400 watt @220VAC watt Field Replaceable AC power supply Supports second Field Replaceable AC power supply for redundancy Power consumption: 275 watts @120VAC Thermal rating: 938 BTU/hour
PoE Power output:	800 watts @120VAC; 1200 watts @220VAC with single power supply

Ordering Information

ERS 5900 Series Models	
AL59000?1*-E6	ERS 5928GTS featuring 24 x 10/100/1000BASE-T ports, plus 4 x SFP+ uplink ports
AL59000?2*-E6	ERS 5928GTS-PWR+ featuring 24 x 10/100/1000BASE-T PoE+ ports, plus 4 x SFP+ uplink ports
AL59000?3*-E6	ERS 5952GTS featuring 48 x 10/100/1000BASE-T ports, plus 4 x SFP+ uplink ports
AL59000?4*-E6	ERS 5952GTS-PWR+ featuring 48 x 10/100/1000BASE-T PoE+ ports, plus 4 x SFP+ uplink ports

Notes:

- Each Switch ships with a Base Software License and either a 450W (for non-PoE units) or 1400W (for PoE+ units) Power Supply Unit
- Stacking cables are not included and must be ordered separately
- The eighth character (?) of the order number must be replaced with the proper letter to indicated desired product nationalization.
- The tenth character (*) of the order number must be replaced with “F” for front-to-back or “B” for back-to-front cooling options

Stacking Cables for ERS 5900	
AA1404037-E6	0.5M Stacking Cable (QSFP+ to QSFP+) for ERS 5900
AA1404029-E6	1M Stacking Cable (QSFP+ to QSFP+) for ERS 5900
AA1404031-E6	3M Stacking Cable (QSFP+ to QSFP+) for ERS 5900
AA1404032-E6	5M Stacking Cable (QSFP+ to QSFP+) for ERS 5900

Power Supplies and Fan Trays for ERS 5900	
AL7000?0B-E6	450W AC Power Supply with Back-to-Front Cooling
AL7000?0F-E6	450W AC Power Supply with Front-to-Back Cooling
AL1905?3B-E6	1400W AC PoE+ Power with Back-to-Front Cooling
AL1905?3F-E6	1400W AC PoE+ Power with Front-to-Back Cooling
AL5900BTF-E6	Fan Tray for Back-to-Front Cooling on ERS 5900
AL5900FTB-E6	Fan Tray for Front-to-Back Cooling on ERS 5900

Note:

- The seventh character (?) of the Power Supply order number must be replaced with the proper letter to indicated desired product nationalization power cord option.

Software for ERS 5900	
380221	Advanced License for ERS 5900 (includes OSPF, PIM-SM, VRRP and ECMP)

Technical Specifications

ERS 5900 Series Models

IEEE 802.1D Spanning Tree Protocol
IEEE 802.1w Rapid Spanning Tree
IEEE 802.1s Multiple Spanning Tree
IEEE 802.1t 802.1D Maintenance
IEEE 802.1p Prioritizing
IEEE 802.1Q VLAN Tagging
IEEE 802.1X Ethernet Authentication Protocol
IEEE 802.1AB Link Layer Discovery Protocol
IEEE 802.1AX Link Aggregation Control Protocol (LACP)
IEEE 802.1ag Connectivity and Fault Management
IEEE 802.1aq Shortest Path Bridging MAC
IEEE 802.3 Ethernet
IEEE 802.3af Power over Ethernet
IEEE 802.3at Power over Ethernet Plus
IEEE 802.3ad / 802.1AX Link Aggregation Control Protocol - LACP
IEEE 802.3ab Gigabit Ethernet over Copper
IEEE 802.3ae 10Gbps Ethernet
IEEE 802.3ak 10GBase-CX4
IEEE 802.3i 10Base-T
IEEE 802.3u Fast Ethernet
IEEE 802.3x Flow Control
IEEE 802.3z Gigabit Ethernet
RFC 768 UDP
RFC 783 TFTP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 Telnet
RFC 894 IP over Ethernet
RFC 903 Reverse ARP
RFC 950 / RFC 791 IP
RFC 951 BootP
RFC 958 NTP
RFC 1058 RIPv1
RFC 1112 IGMPv1
RFC 1122 Requirements for Internet hosts
RFC 1155 SMI
RFC 1156 MIB for management of TCP/IP
RFC 1157 SNMP
RFC 1212 Concise MIB definitions
RFC 1213 MIB-II
RFC 1215 SNMP Traps Definition
RFC 1340 Assigned Numbers
RFC 1350 TFTP
RFC 1354 IP Forwarding Table MIB
RFC 1398 Ethernet MIB
RFC 1442 SMI for SNMPv2
RFC 1450 MIB for SNMPv2
RFC 1493 Bridge MIB
RFC 1519 Classless Inter-Domain Routing (CIDR)
RFC 1591 DNS Client
RFC 1650 Definitions of Managed Objects for Ethernet-like Interfaces
RFC 1724 / RFC 1389 RIPv2 MIB extensions
RFC 1769 / RFC 1361 SNTP
RFC 1886 DNS extensions to support IPv6
RFC 1908 Coexistence between SNMPv1 & v2
RFC 1945 HTTP v1.0
RFC 1981 Path MTU Discovery for IPv6
RFC 2011 SNMP v2 MIB for IP
RFC 2012 SNMP v2 MIB for TDP
RFC 2013 SNMP v2 MIB for UDP
RFC 2096 IP Forwarding Table MIB
RFC 2131 / RFC 1541 Dynamic Host Configuration Protocol (DHCP)
RFC 2138 RADIUS Authentication
RFC 2139 RADIUS Accounting
RFC 2236 IGMPv2
RFC 2328 / RFC 2178 / RFC 1583 OSPFv2
RFC 2453 RIPv2
RFC 2454 IPv6 UDP MIB
RFC 2460 IPv6 Specification
RFC 2461 IPv6 Neighbor Discovery
RFC 2464 Transmission of IPv6 packets over Ethernet
RFC 2474 Differentiated Services (DiffServ)
RFC 2541 Secure Shell protocol architecture
RFC 2597 Assured Forwarding PHB Group
RFC 2598 Expedited Forwarding PHB Group
RFC 2616 / RFC 2068 HTTP 1.1
RFC 2660 HTTPS - Secure Web
RFC 2665 / RFC 1643 Ethernet MIB
RFC 2674 Q-BRIDGE-MIB
RFC 2710 Multicast Listener Discovery version 1 (MLDv1)
RFC 2715 Interoperability Rules for Multicast Routing Protocols
RFC 2787 Definitions of Managed Objects for VRRP
RFC 2819 / RFC 1757 / RFC 1271 RMON
RFC 2851 Textual Conventions for Internet network addresses
RFC 2863 / RFC 2233 / RFC 1573 Interfaces Group MIB
RFC 2865 RADIUS
RFC 2866 / RFC 2138 RADIUS Accounting
RFC 2869 RADIUS Extensions - Interim updates
RFC 2933 IGMP MIB
RFC 3058 RADIUS Authentication
RFC 3140 / RFC 2836 Per-Hop Behavior Identification codes
RFC 3162 RADIUS and IPv6
RFC 3246 Expedited Forwarding Per-Hop Behavior
RFC 3260 / RFC 2475 Architecture for Differentiated Services
RFC 3289 DiffServ MIBs
RFC 3410 / RFC 2570 SNMPv3
RFC 3411 / RFC 2571 SNMP Frameworks
RFC 3412 / RFC 2572 SNMP Message Processing
RFC 3413 / RFC 2573 SNMPv3 Applications
RFC 3414 / RFC 2574 SNMPv3 USM
RFC 3415 / RFC 2575 SNMPv3 VACM
RFC 3416 / RFC 1905 SNMP
RFC 3417 / RFC 1906 SNMP Transport Mappings
RFC 3418 / RFC 1907 SNMPv2 MIB

ERS 5900 Series Models (cont.)

- RFC 3484 Default Address Selection for IPv6
- RFC 3513 IPv6 Addressing Architecture
- RFC 3569 Overview of Source Specific Multicast (SSM)
- RFC 3579 RADIUS support for EAP
- RFC 3584 / RFC 2576 Co-existence of SNMP v1/v2/v3
- RFC 3587 IPv6 Global Unicast Format
- RFC 3596 DNS extensions to support IPv6
- RFC 3621 Power over Ethernet MIB
- RFC 3635 Definitions of Managed Objects for the Ethernet-like Interface Types
- RFC 3768 / RFC 2338 VRRP
- RFC 3810 MLDv2 for IPv6
- RFC 3826 AES for the SNMP User-based Security Model
- RFC 3917 Requirements for IPFIX
- RFC 3954 Netflow Services Export v9
- RFC 3993 DHCP Subscriber-ID sub-option
- RFC 4007 Scoped Address Architecture
- RFC 4022 / RFC 2452 TCP MIB
- RFC 4113 UDP MIB
- RFC 4133 / RFC 2737 / RFC 2037 Entity MIB
- RFC 4193 Unique Local IPv6 Unicast Addresses
- RFC 4213 Transition Mechanisms for IPv6 Hosts & Routers
- RFC 4250 SSH Protocol Assigned Numbers
- RFC 4251 SSH Protocol Architecture
- RFC 4252 SSH Authentication Protocol
- RFC 4253 SSH Transport Layer Protocol
- RFC 4254 SSH Connection Protocol
- RFC 4291 IPv6 Addressing Architecture
- RFC 4293 IPv6 MIB
- RFC 4344 SSH Transport layer Encryption Modes
- RFC 4345 Improved Arcfour Modes for SSH
- RFC 4429 Optimistic Duplicate Address Detection (DAD) for IPv6
- RFC 4432 SSHv2 RSA
- RFC 4443 / RFC 2463 ICMPv6 for IPv6
- RFC 4541 Considerations for IGMP and MLD snooping switches
- RFC 4601 Protocol Independent Multicast – Sparse Mode (PIM-SM) Protocol Specification
- RFC 4604 / RFC 3376 IGMPv3
- RFC 4673 RADIUS Dynamic Authorization Server MIB
- RFC 4675 RADIUS Attributes for VLAN and Priority Support
- RFC 4716 SSH Public Key File Format
- RFC 4750 / RFC 1850 / RFC 1253 OSPF v2 MIB
- RFC 4789 SNMP over IEEE 802 Networks
- RFC 4861 Neighbor Discovery for IPv6
- RFC 4862 / RFC 2462 IPv6 Stateless Address Auto-Configuration
- RFC 5010 / RFC 3046 DHCP Relay Agent Information Option 82
- RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
- RFC 5101 Specification of the IP Flow Information Export (IPFIX) Protocol for Exchange of IP Traffic
- RFC 5176 / RFC 3576 Dynamic Authorization Extensions to RADIUS
- RFC 5186 IGMPv3/MLDv2 and Multicast Routing Interaction
- RFC 5905 / RFC 4330 / RFC 1305 NTPv4
- RFC 6329 IS-IS Extensions Supporting Shortest Path Bridging

General and Performance

- Switch Fabric performance: 212Gbps to 260Gbps
- Frame forwarding rate: 157 to 193Mpps
- Stack Throughput: 672Gbps (8-unit stack)
- Latency (64 byte packet): 3.5 microseconds
- Frame length: 64 to 1518 Bytes (untagged), 64 to 1522 bytes (tagged)
- Jumbo Frame support: up to 9216 Bytes (tagged)
- Multi-Link/LAG Trunks: up to 32 Groups, with 8 Links per Group
- VLANs: up to 1,024 Port/Protocol
- Multiple Spanning Tree Groups: 8
- MAC Address: up to 8k
- DHCP Snooping: up to 1,024 table entries
- 802.1X Clients: up to 768
- LLDP Neighbors: up to 800
- ARP Entries: up to 1,792
- IP Interfaces: up to modified value
- IPv4 Routes: up to 512
- OSPF Instances: up to 4
- OSPF Adjacencies: up to 16
- ECMP Paths: up to 4
- VRRP Instances: up to 256
- IPFIX Sampled Flows: up to 100,000
- Auto-MDIX
- QoS Priority Queues: 8
- Enterprise Device Manager GUI, on-box & off-box

Pluggable Interfaces

1000BASE-T SFP up to 100m over CAT5E or better UTP Cable (RJ-45)	100BASE-FX SFP up to 2km reach over MMF (Duplex LC)
1000BASE-SX SFP up to 550m reach on MMF (Duplex LC)	Ethernet-over-T1 SFP up to 2,874m reach over 22AWG Cable (RJ-48C)
1000-BASE-LX SFP up to 550m reach on MMF, and up to 10 km on SMF (Duplex LC)	10GBASE-SR SFP+ up to 300m reach over MMF (Duplex LC)
1000BASE-XD CDWM SFP up to 40 km reach on SMF (Duplex LC)	10GBASE-LRM SFP+ up to 220m over FDDI-grade MMF (Duplex LC)
1000BASE-ZX CDWM SFP up to 70 km reach on SMF (Duplex LC)	10GBASE-LR SFP+ up to 10km reach over SMF (Duplex LC)
1000BASE-EX SFP up to 120 km reach on SMF (Duplex LC)	10GBASE-ER SFP+ up to 40km reach over SMF (Duplex LC)
1000BASE-BX SFP up to 10 and 40 km reach variants on SMF (LC)	10GBASE-X SFP+ Direct Attach Cables, in 3, 5, & 10m lengths

Environmental Specifications

Operating temperature: 0°C to 50°C (32°F to 122°F)	Operating altitude: 0 to 3,048m (0 to 10,000ft) maximum
Storage temperature: -40°C to 85°C (-40°F to 185°F)	Acoustic Noise: less than 40dbA at 25°C; less than 53dbA at 50°C
Operating humidity: 0 to 95% maximum relative humidity, non-condensing	

Safety Agency Approvals

IEC60950 International CB Certification	Anatel Brazilian Safety
EN60950-1 Europe Safety (CE); CB Scheme Certification with Member Deviations	ACMA-RCM Australia Safety
UL60950-1 United States of America Safety	GOST-R Russia Safety
CSA-C22.2, #60950-1 Canada Safety	CCC & MIIT China Safety
NOM Mexico Safety	CNS14336-1 Taiwan BSMI Safety
EN60950-1 Japan Safety	

Electromagnetic Emissions & Immunity

CISPR22 International EMC Emissions	ACMA-RCM mark Australia EMC Emissions
CIRPR24 International EMC Immunity	Anatel Brazilian EMC Certification
FCC part 15B, Class A USA EMC Emissions	GOST-R Russia EMC Certification
ICES-003 Class A Canadian EMC Emissions	CCC & MIIT China EMC Certification
VCCI Japan EMC Emissions	KC mark: EMI & EMS Korean EMC Certification
EN55022 Class A, CISPR22 European EMC Emissions (CE)	CNS13438 Taiwan BSMI EMC
EN55024, CISPR24 including EN61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8 & 4-11 European EMC Immunity (CE)	

[1] MACSec capabilities to be enabled in a future ERS 5900 software release

About Avaya

Avaya is a leading, global provider of customer and team engagement solutions and services available in a variety of flexible on-premise and cloud deployment options. Avaya's fabric-based networking solutions help simplify and accelerate the deployment of business critical applications and services. For more information, please visit **www.avaya.com.**

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